PROJECT TEAM

Construction & Management.

VINCINITY MAP

State of Utah - Division of Facilities AXIS ARCHITECTS

ARCHITECT:

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STRUCUTRAL:

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Structural Engineer/

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Quin E. Whitaker, P.E. SECB

	CODE ANALYSIS	PROJECT TEA
In	APPLICABLE CODES  Year Year  International Building Code 2006 National Electrical Code 2006	OWNER: State of Utah - Division of Construction & Managem Darrell Hunting 4110 State Office Building
Ir Ir Ir	International Building Code 2006 Uniform Code for Building Conservation ADA Accessibility Guildelines Conservation Code 2006	Salt Lake City, Utah 8411 phone (801)538-9617 fax (801)538-3267
A.	Occupancy and Group: EXIST. BLDG: B	
	Change in Use: Yes No Mixed Occupancy: Yes No Special Use and Occupancy (e.g. High Rise, Covered Mall):	
В.	Seismic Design Category: Design Wind Speed: mph	
C.	Type of Construction (circle one):	
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	VINCINITY MA
D.	Fire Resistance Rating Requirements for the Exterior Walls based on the fire separation distance (in hours):  North: South: East: West:	1000 N 1000 N
≣.	Mixed Occupancies: Nonseparated Uses:	
=:	Sprinklers:	900 N
	Required: Provided: Type of Sprinkler System: _[EXISTING]	
G:	Number of Stories:1 Building Height:15'	20 J
վ:	Actual Area per Floor (square feet): EXISTING: 54,900 SF	
: I:	Tabular Area:  Area Modifications:	
	a) $A_a = A_t + \left[\frac{A_t I_f}{100}\right] + \left[\frac{A_t I_s}{100}\right]$ $I_f = 100 \left[\frac{F}{P} - 0.25\right] \frac{W}{30}$	700 N
	b) Sum of the Ratio Calculations for Mixed Occupancies:  Actual Area Allowable Area	PROJECT LOCATION
	c) Total Allowable Area for:  1) One Story: 73,626 SF  2) Two Story: A <sub>a</sub> (2)  3) Three Story: A <sub>a</sub> (3)	
	d) Unlimited Area Building: Yes No Code Section:	
K.	Fire Resistance Rating Requirements for Building Elements (hours).	
	Design Occupant Load: NA Exit Width Provided: NA	
M.	Minimum Number of Required Plumbing Facilities: NA	
	a) Water Closets - Required (m) (f) Provided (m) (f) b) Lavatories - Required (m) (f) Provided (m) (f) c) Bath Tubs or Showers: d) Drinking Fountains: Service Sinks:	
1)	DTNOTES: In case of conflict with the U.S. Department of Justice Federal Registers Parts I through ▼ - ADA Guidelines and specific reference to the International Building Code Accessibility Chapters, the more restrictive requirement shall govern.	
•	Additional Code Information shall be provided at the discretion of the Building Official for Complex Buildings. Including, but not limited to:  a) High Rise Requirements.	
	b) Atriums.	
	c) Performance Based Criteria. d) Means or Egress Analysis.	
	e) Fire Assembly Locator Sheet. f) Exterior and Interior Accessibility Route.	
	g) Fire Stopping, Including Tested Design Number.	
	All Roofing material manufacturers are required to meet or exceed the	

Holyoke, MA 01040

systems - criteria 29

Maumee, OH 43537

**GENFLEX ROOFING SYSTEMS** Suite A 1722 Indian Wood Circle

Class A Mechanically Fastened Stevens "EP TPO" Single Ply membrane

Please note: All Other manufacturers will be reviewed for approval prior to bid.

All UL manufacturer assembly criteria must be provided to the architect or

PVC, Mechanically Fastened or Mechanically Fastened TPO

owner for review and approval prior to bidding.

UL R10321

UL R9334

SYMBOL LEGEND ROOM NUMBER 1ST DIGIT INDICATES DETAIL **EXTERIOR** REFERENCE **ELEVATION** BUILDING WALL SECTION SECTION \_FRAME NUMBER **GLAZING TYPE** DOOR SYMBOL DOOR TYPE INT. ELEVATION SYMBOL SYMBOL \_ NORTH WALL FINISH  $_{-}$  BASE FINISH WINDOW **CEILING TYPE** SPOT ELEVATION \_\_FLOOR FINISH NUMBER WALL TYPE AND HEIGHT MARKER FINISH SYMBOL

	EARTH	STEEL	PLYWOOD
	CEMENTIOUS BACKER BD.	RIGID INSULATION	WOOD FINISH
	СМИ	ASPHALT PAVING	ALUMINUM
	BRICK	DENSGLASS SHEATHING	BATT INSULATION
××××	WOOD BLOCKING	GRAVEL	CERAMIC TILE
	WOOD FRAMING	CONCRETE	GYPSUM SHEATHING

**DRAWING INDEX** GI101 GENERAL INFORMATION ARCHITECTURAL AD101 DEMOLITION ROOF PLAN AE101 ROOF PLAN STRUCTURAL AE101 STRUCTRUAL SHEET AE201 STRUCTRUAL DETAILS NOTE: THE SHEETS LISTED ABOVE REPRESENT A FULL SET OF CONSTRUCTION DOCUMENTS AND INCLUDE A DETAIL BOOK AND A PROJECT MANUAL AND SHALL NOT BE SEPERATED. ANY CONTRACTOR, SUBCONTRACTOR, VENDOR OR ANY OTHER PERSON PARTICIPATING IN OR BIDDING ON THIS PROJECT SHALL BE RESPONSIBLE FOR REVIEWING ALL THE CONSTRUCTION DOCUMENTS INCLUDING BUT NOT LIMITED TO DRAWINGS, DETAILS, PROJECT MANUAL, SPECIFICATIONS AND ANY AND ALL



State of Utah-Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

4110 State Office Building/Salt Lake City, Utah 84114/538-3018

DFCM PROJECT # 06027770

## UtahState UNIVERSITY

Physical Facilities Building Roofing Improvements 1200 East 700 North Logan, Utah

acilities Building

Axis Job # **0612** 

Checked AT

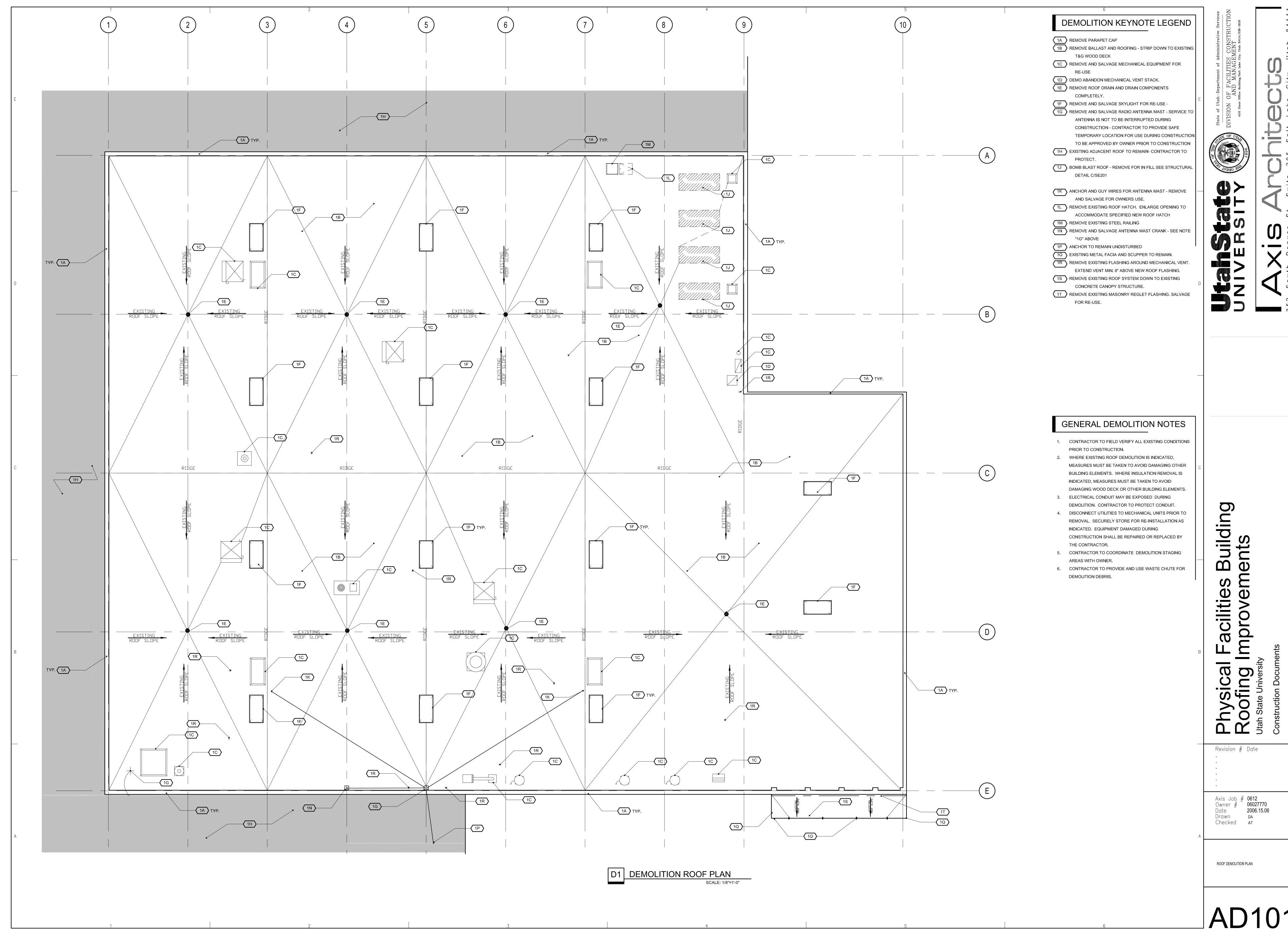
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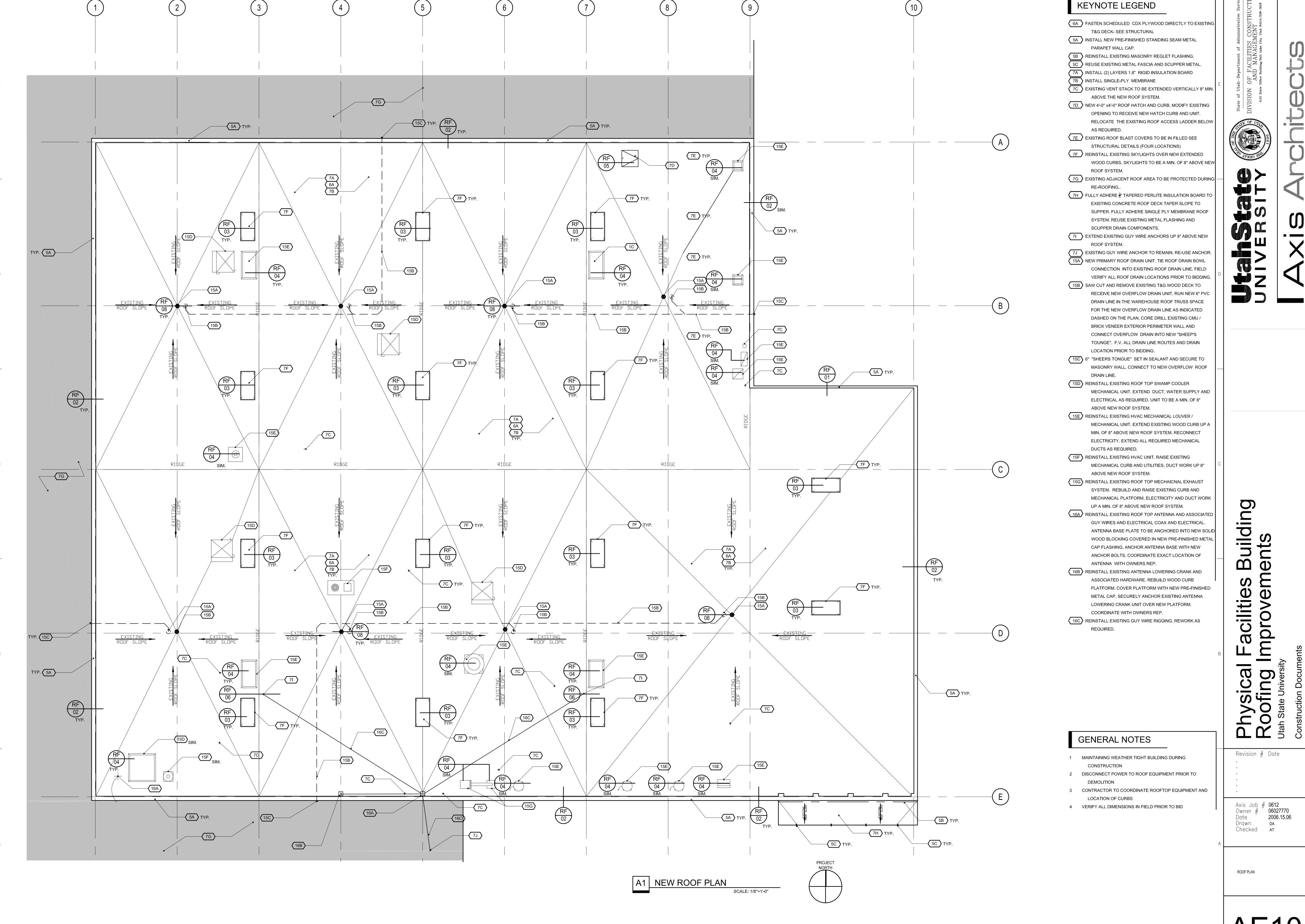
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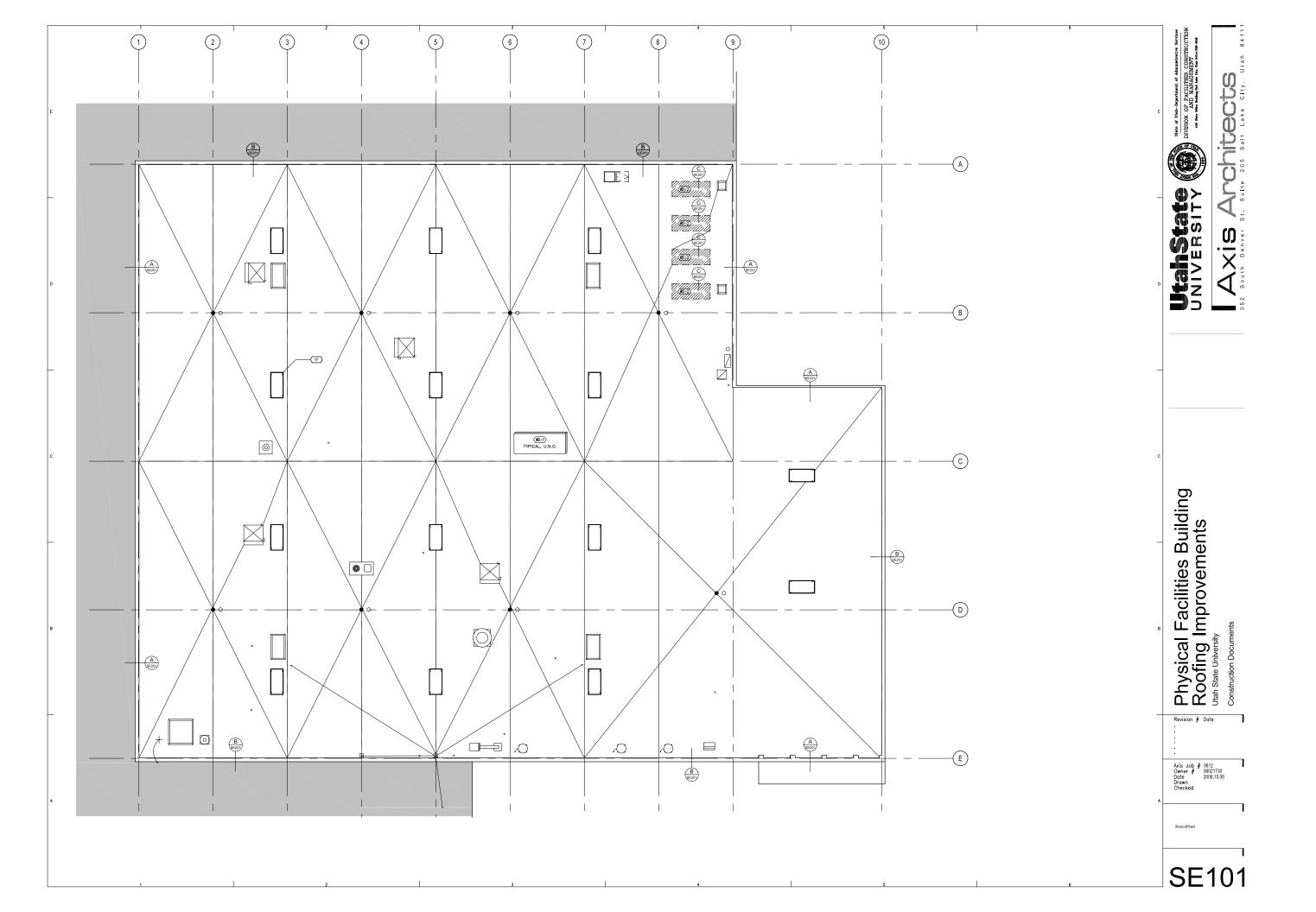
Owner # 06027770

2006.15.06





AE101



#### GENERAL

- THE STRUCTURAL NOTES ARE INTENDED TO COMPLIMENT THE PROJECT SPECIFICATIONS. SPECIFIC NOTES AND DETAILS IN THE DRAWNOS SHALL GOVERN OVER THE STRUCTURAL NOTES AND TYPICAL DETAILS.
- 2. TYPICAL DETAILS AND SECTIONS SHALL APPLY WHERE SPECIFIC DETAILS ARE NOT SHOWN.
- THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS AND DIMENSIONS. IF ACTUAL CONDITIONS DIFFER FROM THOSE SHOWN IN THE CONTRACT DRAWINGS, THE CONTRACTOR SHALL MIMEDIATELY NOTIFY THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE FABRICATION OF CONSTRUCTION OF ANY AFFECTED ELEMENTS.
- 4. OMISSIONS OR CONFLICTS BETWEEN THE CONTRACT DRAWNIGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEDING WITH ANY WORK NIVOUVED. IN CASE OF CONFLICT, FOLLOW THE MOST STRINGENT REQUIREMENT AS DIRECTED BY THE ARCHITECT/ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
- 5. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE ARCHITECT/ENGNIERE BEFORE PROCEEDING WITH ANY CHANGES, SUBSTITUTIONS OR MODIFICATIONS. ANY WORK DONE BY THE CONTRACTOR BEFORE RECEIVING WRITTEN APPROVAL WILL BE AT THE CONTRACTOR'S THE STATE OF STATE.
- 6. THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES ANY ITEMS THAT ARE TO BE INTEGRATED INTO THE STRUCTURAL SYSTEM SUCH AS OPENINGS, PENETRATIONS, MECHANICAL AND ELECTRICAL ECUIPMENT, ETC. SIZES AND LOCATIONS OF MECHANICAL AND OTHER ECUIPMENT THAT DIFFERS FROM THOS SHOWN ON THE CONTRACT DRAWNOSS SHALL BE REPORTED TO THE ARCHITECT-PENINGER.
- 7. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRAGES AS REQUIRED FOR HIS METHOD. TERCTION SHORING FOR THE PREMANENT MEMBERS ARE COMPLETED. THE BUILDING SHALL NOT BE CONSIDERED STABLE UNTIL THE FLOOR/ROOF SYSTEM IS COMPLETED.
- SITE OBSERVATIONS BY FIELD REPRESENTATIVES OF UTAH STATE UNIVERSITY SHALL NEITHER BE CONSTRUED AS APPROVAL OF CONSTRUCTION PROCEDURES NOR SPECIAL INSPECTION.
- 9. DETAILING AND SHOP DRAWING PRODUCTION FOR STRUCTURAL ELEMENTS WILL REQUIRE INFORMATION (INCLUDING DIMENSIONS) CONTAINED IN THE ARCHITECTURAL, STRUCTURAL AND/RO THER CONSULTANT'S DRAWINGS. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL AND OTHER CONSULTANT'S DRAWINGS, SOME DIMENSIONS AND ELEMENTS SUCH AS ELEVATIONS, DEPRESSIONS, SLOPES, MICHANICAL AND HOUSEKEEPING PADS, ETC., MAY NOT BE SHOWN IN THE STRUCTURAL DRAWINGS.
- 10. REVIEW OF SHOP DRAWING SUBMITTALS BY UTAH STATE UNIVERSITY IS FOR GENERAL COMPLIANCE ONLY AND IS NOT INTENDED FOR APPROVAL. THE SHOP DRAWING REMEW SHALL, NOT RELIEVE THE PROJECT ACCORDING TO THE CONTRACT DOCUMENTS. SEE PROJECT ACCORDING TO THE CONTRACT DOCUMENTS. SEE SPECIFICATIONS FOR REQUIRED SUBMITTALS. ALL SUBMITTALS SHALL BE MADE IN A TIMELY MANNER AS INDICATED IN THE SPECIFICATIONS.
- 11. SHOP DRAWINGS MADE FROM REPRODUCTIONS OF THE CONTRACT DRAWINGS WILL BE REJECTED UNLESS THE CONTRACTOR SIGNS A RELEASE AGREEMENT PRIOR TO THE SHOP DRAWINGS BEING REVIEWED.

#### BASIS OF DESIGN

- 1. GOVERNING BUILDING CODE: IBC 2003
- 2. SEISMIC DESIGN:
- A. SEISMIC USE GROUP: 1.00
  B. MAPPED SPECTRAL RESPONSE ACCELERATIONS:

- B. MAPPED SPECTRAL RESPONSE ACCELERATIONS:
  1) Sis = 1.11g
  2) S1 = 0.33g
  C. SPECTRAL RESPONSE COEFFICIENTS:
  1) SDS = 0.79
  2) SD1 = 0.38
  D. SITE CLASS: D
  E. SESURIC DESIGN CATEGORY: D
  F. RESPONSE MODIFICATION FACTOR, R = 2.5
  G. BASIC LATERAL-FORCE-RESISTING SYSTEM: ORMSW
  H. BASE SHEAR (V)=(1.2\*DS\*W/1.4\*R)+0.75, WHERE W=WEIGHT OF BLDG.
  1. ANALYSIS PROCEDURE: ASCE/SEI 31-03

#### 3. WIND DESIGN:

- A. BASIC WIND SPEED (3-SEC GUST) = 110 MPH
  B. EXPOSURE CATEGORY: B
  C. IMPORTANCE FACTOR, Iw = 1.00
  D. BUILDING CATEGORY: ENCLOSED

- 4. ROOF DESIGN LOADS:
- A. DEAD LOAD = 30 PSF B. SNOW CRITERIA:
- SNOW CRITERIA:
  1) GROUND SNOW LOAD, Pg = 63.5 PSF
  2) FLAT-ROOF SNOW LOAD, Pf = 40 PSF
  3) SNOW EXPOSURE FACTOR, Ce = 0.90
  4) IMPORTANCE FACTOR, Is = 1.00
  5) THERMAL FACTOR, Ct = 1.00

#### QUALITY ASSURANCE

- 1. THE ONNER SHALL ENCAGE A QUALIFIED QUALITY ASSURANCE AGENCY TO PROMDE ALL SPECIAL INSPECTION AND QUALITY ASSURANCE TESTING FOR THE PROJECT ALL QUALITY ASSURANCE PERSONNAL ASSIGNED TO THE PROJECT SHALL DEMONSTRATE COMPETENCE. TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OF OPERATION REQUIRING INSPECTION.
- 2. THE SPECIAL INSPECTOR(S) SHALL INSPECT THE WORK PER CHAPTER
  17 OF THE IBC FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS.
  THE SPECIAL INSPECTOR SHALL SEND REPORTS TO THE OWNER, BUILDING
  OFFICIAL, ARCHITECT, ENGINEER AND CONTRACTOR. ALL DISCREPANCIES
  SHALL BE REQUIGHT TO THE MIMEDIAE A THEYINDON OF THE CONTRACTOR
  FOR CORRECTION. THE QUALITY ASSURANCE ACENCY SHALL SUBMIT A
  TO THE INSETS FOR THE AUGUST HAS THE OWNER WING WAS
  TO THE OWNER FOR THE OWNER OWNER OWNER WHO THE FLANS,
  SPECIFICATIONS AND APPLICABLE PROVISIONS OF THE IBC.
- 3. SPECIAL INSPECTION, AS REQUIRED BY SECTIONS 1704 AND 1707 OF THE IBC SHALL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED BY THE OWNER UNLESS WAIVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL GOORDINATE AND COOPERATE WITH THE REQUIRED INSPECTIONS. ITEMS REQUIRING SPECIAL INSPECTIONS ARE AS FOLLOWS.
- INSTRUCTIONS. THUM SEQUENTING SPECIAL INSTRUCTIONS ARE AS POUR.
  A. CONCRETE AND ELEMENTS EMBEDDED IN CONCRETE.
  B. STRUCTURAL STEEL FABRICATION AND ERECTION.
  C POST—INSTALLED ANCHORS, INCLUDING (BUT NOT LIMITED TO)
  EXPANSION ANCHORS, ADHESIVE ANCHORS AND LOW VELOCITY
  ANCHORS.
- ANCHORS.

  4. ELLEWIST THAT ARE A PART OF THE MAIN SEISMIC FORCE RESISTING SYSTEM FOR THE STRUCTURE MAY REQUIRE ADDITIONAL QUALITY ASSURANCE INSPECTIONS AND TESTING. THIS LATERAL FORCE RESISTING SYSTEM FOR THE STRUCTURE INCLUDES THE FOLLOWING ELEMENTS: A. SHEARWALLS, BRACES AND/OP MOMENT FRAMES.

  B. FOOTING AND FOUNDATION SYSTEMS THAT DIRECTLY SUPPORT THE WALLS, COLUMNS AND BRACES NOTED ABOVE.

  C. ROOF DECK OR SHEATHING.

  P. FLOOR BECK, SHEATHING AND/OR SLAB SYSTEMS.

  ALL ELEMENTS LABELED AS 'DRACES STUDIES' OR "CHORDS".

  F. COMPACTIONS ESTIMET THE ELEMENTS MOTED ABOVE.

- 5. THE FOLLOWING MATERIALS SHALL BE TESTED PER IBC SECTIONS 1704
  AND 1708. THE OWNER RESERVES THE RIGHT TO IEST ANY AND ALL
  MATERIALS USING ANY APPORTIATE NON-DESTRUCTIVE PROCEDURE.
  ANY TIEMS FOUND TO BE DEFICIENT SHALL BE CORRECTED AND
  RETISTED AT NO ADDITIONAL COST TO THE OWNER.

- A. EARTHWORK
  B. CONCRETE STRENGTH VERIFICATION AND TESTING.
  C. WELDED CONNECTIONS.
  D. POST-INSTALLED ANCHORS, ADHESIVE ANCHORS AND EXPANSION ANCHORS.
- 6. THE ENGINEER OF RECORD MAY PERFORM STRUCTURAL OBSERVATIONS AT CRITICAL PHASES OF THE PROJECT. CONTRACTOR SHALL COORD— INATE ANY OR ALL REQUIRED VISITS WITH THE ENGINEER AND SHALL NOTIFY THE ENGINEER AT LEAST 24 HOURS PRIOR TO SUCH EVENTS.

#### TIMBER

- MATERIALS:
   A: ALL FRAMING LUMBER SHALL BE DOUGLAS-FIR LARCH CLEARLY MARKED WITH A STAMP BY A WWPA APPROVED AGENCY.
   UNLESS NOTED OTHERWISE, WOOD GRADES SHALL BE AS FOLLOWS:
   J. JUSTS AND RAFTERS: NO. 2
- C. WOOD SHEATHING SHALL BE INTERIOR GRADE, APA RATED SHEATHING WITH EXTERIOR GLUE AND SPAN RATING AS FOLLOWS (U.N.O.):

LOCATION	NOMINAL THICKNESS	SPAN RATING
ROOF OVERLAY	1/2"	24/16
ROOF	5/8"	32/16

D. UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE STANDARD COMMON WITH THE FOLLOWING PROPERTIES:

NAIL SIZE	SHANK DIAMETER	MIN. PENETRATION
8D	0.131"	1.50"
10D	0.148"	1.75"
16D	0.162"	2.00"
20D	0.192"	2.50"

- NAILS/STAPLES USED WITH PREUMATIC GURS MAY ONLY BE USED IN PLACE OF COMMON NAILS WITH PRIOR APPROVAL OF THE ENGINEER. FURNISHED BY TUSE—AUST CORPORATION OF APPROVED EDULAL ALL FRAMING ANCHORS, POST CAPS, HOLD DOWNS, COLUMN BASES, ETC., SHALL BE PROVIDED BY SIMPSON STRONG TE OR APPROVED EDULA. ALL HARDWARE SHALL BE INSTALLED AS FER MANUFACTURES RECOMMENDATIONS AND/OR REQUIREMENTS.
- NAILED CONNECTIONS FOR GENERAL FRAMING AND CARPENTRY SHALL BE AS PER IBC TABLE 2304.9.1 "FASTENING SCHEDULE", UNLESS NOTED OTHERWISE
- FASIENING SCHEDULE, UNLESS NOIED OTHERWISE.

  4. UNLESS NOTED OTHERWISE, ALL ROOF SHEATHING SHALL BE NAIED TO SUPPORTS WITH 10D COMMON NAILS AS FOLLOWS:

  A. 4° O.C. AT ALL ROOF AND FLOOR SHEATHING INTO BEARING AND/OR SHEARWALLS AND AT TOPS AND BOTTOMS OF WALLS.

  B. 6° O.C. AT INLE OTHER PANEL EGGES OF SHEATHING.

  C. 12° O.C. AT INTERIOR SUPPORTS IN THE FIELD OF PANELS.
- SHEATHING FASTENERS SHALL BE DRIVEN SO THAT THEIR HEAD OR CROWN IS FLUSH WITH WITH THE SURFACE OF THE SHEATHING.

DIAPHRAGM PANEL PANEL MARK THICKNESS EDGES

NAIL SPACING LEGEND

NOTES:

- 6. STRUCTURAL PANEL OVERLAYS A. TO ENSURE CONTINUOUS SHEAR TRANSFER, OFFSET PANEL JOINTS FROM THOSE OF PARALLEL BOARD JOINTS SUCH THAT PANEL NAILING OCCURS ON A SINGLE, EXISTING DECK BOARD.
- B. FIELD NAILING IS CRITICAL. SINCE STRUCTURAL PANELS OVERLAY EXISTING BOARD DECKING, INSTALL FIELD NAILING AS PER THE WOOD DIAPHRAGM SCHEDULE IN 24° O.C. LIPES ACROSS EACH PANEL.
  C. NAIL PENETRATION SHALL BE NO LESS THAN 1-1/2° FOR A 10d NAIL.

WOOD DIAPHRAGM SCHEDULE

(WD-2) 5/8" UNBLOCKED 10d 0 4" 0.C. 10d 0 4" 0.C. 10d 0 12" 0.C. CONCRETE ROOF IN−FILL AREAS

13. ALL NAILS SHALL BE COMMON MALE PASTRIER SUBSTITUTIONS ARE NOT ALLOWED WITHOUT ENGINEER'S APPROVAL 3. SEE STRUCTURAL NOTES FOR FURTHER INFORMATION 4. SEE FRAINING FLANS FOR EXPENTS OF DIAPHRAGM AND THEIR LOCATIONS.

1/2" N/A 10d @ 2" O.C. 10d @ 3" O.C. 10d @ 12" O.C. OVERLAY FOR EXISTING ROOF DECK. SEE STRUCT. NOTES FOR FURTHER INFO.

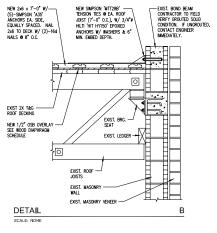
A = CONTINGUS PANEL EDGES AND DIAPHRAGM BOUNDARIES (BOUNDARY NAILING)
B = ALL OTHER PANEL EDGES (EDGE NAILING)
C = INTERMEDIATE PANEL SUPPORTS (IN-FIELD NAILING)

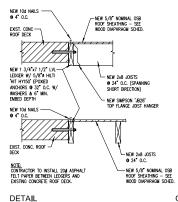
	CUST ZX TAG- ROOF DECKING NEW LIZ OSS OVERLAN SSE MOOD DEPHENON SCHOOL DEPHENON SCHOOL DECKING LEDGER - DOST, ROOF DOSTS, MASONRY WALL	CONDITION. IF UNGROUPED CONTACT ENGINEER IMMEDIATELY.  EXIST. MASONRY VENEER
DETAIL		
SCALE: NONE		

NEW SIMPSON 'LTTI31"
TENSION TIES @ 48" O.C.
W/ 5/8" HILTI 'HIT HY150'
EPOXIED ANCHORS W/ WASHERS
& 6" MIN. EMBED DEPTH.

NEW 2x6 x 7'-0" W/

(5)-SIMPSON 'A35'
ANCHORS EA. SIDE,
EQUALLY SPACED. NAIL
2x6 TO DECK W/ (2)-16d
NAILS © 8" O.C.







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State of Utah-Department of Administratif DIVISION OF FACILITIES CONST AND MANAGEMENT 410 State offer Building/Sail Labs Cys, Usa State,

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### Building ent cilities em Š | Faci Impr Physical P Roofing Ir Revision # Date

Structural Details

SE201